The present invention is directed to a pressure sensitive adhesive sheet, which includes a substrate and, superimposed thereon, a pressure sensitive adhesive layer. The substrate exhibits a maximum value of dynamic viscoelasticity, as measured by tan δ of 0.78 to 1.61 at a temperature ranging from –5 to 80°C. The range of tan δ values allows the pressure sensitive adhesive sheet to precisely follow the irregularities, due to bumps and the like, of an adhered wafer surface, enabling smooth back grinding of the adhered surface.

Claims 1-4 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by or in the alternative under 35 U.S.C. § 103(a) as being obvious over EP 0 798 355 to Nagamoto et al. (hereinafter "Nagamoto"). The Examiner contends that Nagamoto discloses "a pressure-sensitive adhesive sheet comprising a pressure-sensitive adhesive layer and a photocurable resin substrate composed of the urethane acrylate oligomer and a photocurable resin substrate composed of the urethane acrylate oligomer and polyene thiol resin in Applicants' preferred embodiment as noted on page six of the specification." While maintaining this stance, the Examiner alleges that the Declaration by co-inventors Kondo and Nagamoto has "not compared their claimed genus with the closest prior art, namely a pressure sensitive adhesive layer coated on a photocurable resin backing comprising a urethane acrylate oligomer and a 'reactive dilute monomer' or 'photopolymerizable monomer.'"

The Examiner further contends that the properties of the substrate as defined in claims 1 and 2 are considered inherent or obvious based on the teachings of Nagamoto. The Examiner's support for maintaining this contention is that the tan δ value of 0.69 disclosed in the Declaration "is not sufficiently distant" from the claimed range of 0.7 to 1.8.

Applicants again note that the cited European application to Nagamoto is owned by the same Assignee as the present application, namely, Lintec Corporation.

Nagamoto discloses a base material for adhesive tape having a flat surface and "less thickness" than conventional materials. The base material has an adhesive layer formed

thereon, which includes a radiation cured material which is prepared by curing a mixture of urethane acrylate oligomer and reactive dilute monomer. Such a material has a breaking elongation of more than 10%, preferably more than 100%. Applicants again respectfully note that Nagamoto fails to disclose, teach, or in any way mention the dynamic viscosity property as claimed in the present invention. Further, Nagamoto does not disclose that such a pressure sensitive adhesive sheet should be able to precisely follow the irregularities, due to bumps and the like, of an adhered wafer surface, enabling smooth back grinding of the adhered surface.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference." MPEP § 2131 quoting Verdegaal Bros. v. Union Oil Co. of California 814 F.2d 628, 631; 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Nagamoto does not mention, teach, or in any way disclose the required tan δ property of the base material of the pressure sensitive adhesive sheet of the present invention nor its ability to precisely follow the irregularities of an adhered wafer surface. Applicants' data, by way of the Declaration by Mr. Kondo and Mr. Nagamoto, clearly shows the prior art as being outside of the amended claimed tan δ range. Since Nagamoto fails the test for anticipation, the Examiner's rejection under 35 U.S.C. § 102(b), relying on Nagamoto, should be withdrawn.

The Examiner indicates that the tan δ value of 0.69 disclosed in the Declaration "is not sufficiently distant" from the claimed range of 0.7 to 1.8. Applicants have amended claim 1 to recite a tan δ range of 0.78 to 1.61, as supported in the examples. Further, Applicants submit that the Examiner is using improper hindsight to support his contention. The Examiner cannot perform his "analysis of the art as if it contained the knowledge of" Applicants' invention. In other words, the Examiner cannot utilize the prior art "as if it contained the knowledge" of Applicants' invention therein. "Such an analysis does not comport with that required by Graham v. John Deere Co." In re Aufhauser 399 F.2d 275, 280; 158 USPQ 351, 355 (CCPA 1968). The

Examiner may not "utilize the claims as a template and reconstruct the invention willy-nilly by picking and choosing elements at will from the prior art." Procter & Gamble Co. v. Paragon Trade Brands, Inc. 989 F.Supp. 547, 587 (D. Del. 1997).

Nagamoto does not mention, teach or in any way disclose the required tan δ property of the base material of the pressure sensitive adhesive sheet of the present invention nor its ability to precisely follow the irregularities of an adhered wafer surface. It would be improper hindsight for the Examiner to take what has been taught by the present application and weave it into the teachings of Nagamoto to continue to piece together his assertion that the tan δ value of 0.69 disclosed in the Declaration remains "not sufficiently distant" from the amended claimed range of 0.78 to 1.61. Nagamoto does not mention dynamic viscoelasticity or its measurement by way of tan δ in any meaningful way. Therefore, for the Examiner to extract tan δ values from Applicants' Declaration to determine obviousness is improper hindsight, especially in view of the present claim amendment.

The Examiner alleges that the Declaration by Mr. Kondo and Mr. Nagamoto has "not compared their claimed genus with the closest prior art, namely a pressure sensitive adhesive layer coated on a photocurable resin backing comprising a urethane acrylate oligomer and a 'reactive dilute monomer' or 'photopolymerizable monomer.'" In the Declaration, the inventors reproduced example 1 of Nagamoto in which a liquid resin was prepared by mixing a "2-functional urethane acrylate" with a molecular weight of 8,000 (a urethane acrylate oligomer) and morpholine acrylate (a reactive diluent monomer) and a photoinitiator. The liquid resin was applied to a PET film and subsequently cured by UV irradiation. Since the liquid resin/PET system was "photocured," it would seem reasonable to assert that the backing resin was "photocurable". Further, because example 1 is the only embodiment reduced to practice by Nagamoto, it would be reasonably presumed to be the preferred embodiment, and therefore, the best prior art example for comparison. Therefore, Applicants assert that the comparison against

example 1 of Nagamoto was the proper and best prior art to compare against to address the Examiner's rejection.

The Examiner further asserts that comparing examples 1, 2, and 3 of the present application against example 1 of Nagamoto in the Declaration by Mr. Kondo and Mr. Nagamoto was "inadequate" to rebut the *prima facie* case.

> [W]here two references were equally close to the claimed invention there is no reason for insisting that applicant compare with one reference, the one relied on by the examiner, instead of another. Noting that on occasion an examiner may rely on a paper patent which was never reduced to practice and is unavailable for testing, the court reasoned that "where the applicant uncovers a piece of prior art actually used in the real world and establishes that its teachings are equal to the relevant disclosure in a 'paper patent' relied upon ..." it would be unfair to insist on a comparison with the unavailable invention. In re Johnson 747 F.2d 1456, 223 USPQ 1260 (Fed. Cir. 1984).

The Examiner contends that the closest prior art would be the use of a dicyclopentanyl (meth)acrylate or a dicyclopentenyl (meth)acrylate, which are disclosed, but not reduced to practice by Nagamoto. Applicants submit that example 1 is equally relevant to the present disclosure and that it is unfair for the Examiner to insist on a comparison with an unavailable example, i.e., an example that had not been reduced to practice in the prior art. Therefore, Applicants assert that the comparison of examples 1-3 of the present application with example 1 of Nagamoto is sufficient to rebut the Examiner's *prima facie* case.

Further, the Examiner has not suggested any motivation, based on Nagamoto, for one of ordinary skill in the art to manipulate the dynamic viscoelasticity or its measurement by way of tan δ to provide a pressure sensitive adhesive sheet, which is able to precisely follow the irregularities of an adhered wafer surface, enabling smooth back grinding. "The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Laskowski 871 F.2d 115, 117; 10 USPQ2d 1397, 1399 (Fed. Cir. 1989) quoting In re Gordon 773 F.2d 900, 902; 221 USPQ 1125, 1127 (Fed. Cir. 1984). "There must be a reason or suggestion in the art for

selecting the procedure used, other than the knowledge learned from the applicants disclosure." In re Dow Chemical Co. 837 F.2d 471, 473; 5 USPQ 1529, 1531 (Fed. Cir. 1988).

Because Nagamoto fails to disclose, teach, or in any way suggest a pressure sensitive adhesive sheet with the claimed of tan δ property of dynamic viscoelasticity or show an example of such a material inherently containing the claimed tan δ range or any motivation for one skilled in the art to utilize a pressure sensitive adhesive sheet with the claimed tan δ property to enable smooth back grinding, the rejection under 35 U.S.C. 103(a) should be withdrawn.

As the pressure sensitive adhesive sheet as claimed in claims 1 and 2 is patentable, the methods of use as claimed in claims 3 and 4 are, therefore, also patentable.

Accordingly, in view of the foregoing remarks, it is believed that the present application is in condition for allowance. The Examiner's favorable action is respectfully requested.

Respectfully submitted,

WEBB ZIESENHEIM LOGSDON
ORKIN & HANSON, P.C.

By _____

Kent E. Baldauf
Registration No. 25,826
Attorney for Applicants
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818
Telephone No. 412.471.8815
Facsimile No. 412.471.4094
E-mail webblaw@webblaw.com

Marked-Up Version of Claim 1

1. (Twice Amended) A pressure sensitive adhesive sheet comprising a substrate and, superimposed thereon, a pressure sensitive adhesive layer, said substrate exhibiting a maximum value of dynamic viscoelasticity tan δ of [0.7 to 1.8] 0.78 to 1.61 at a temperature ranging from –5 to 80° C.